

**DEPARTMENT OF PRODUCTION ENGINEERING**  
**NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015.**

COURSE OUTLINE				
Course Title	<b>Weldability and Formability Testing Lab</b>			
Course Code	PR 214	No. of Credits	02	
Department	Production Engineering	Faculty	Dr. P. Sathiya & Dr. C.Sathiyarayanan	
Class	IV Semester Production Engineering A & B Section			
Pre-requisites Course Code	PRPC 11, PR 208			
Course Coordinator(s) (if, applicable)	-			
Other-Course Teacher(s)	-			
Course Type	Core course	<input checked="" type="checkbox"/>	Elective course	
Course overview				
<ul style="list-style-type: none"> <li>• Joining of Metal by Arc welding process</li> <li>• Microstructural analysis</li> <li>• Hardness Measurement</li> <li>• Simple forming experiments</li> <li>• Forming characteristics</li> </ul>				
Course objectives				
<ul style="list-style-type: none"> <li>• Applying arc welding processes for joining metal samples, sample preparation for microstructural analysis and mechanical property analysis</li> <li>• To learn fundamental forming concepts</li> </ul>				

COURSE TEACHING AND LEARNING ACTIVITIES				
S.	Week	Date	Topic	Mode of Delivery
1.	1 <sup>st</sup> Week	-	Introduction to Lab experiments	Practical
WELDING				
2.	2 <sup>nd</sup> Week	-	Making Butt Joint on the given samples using SMAW Process	Practical
3.	3 <sup>rd</sup> Week	-	Cutting the welded samples	
4.	4 <sup>th</sup> Week	-	Polishing the samples belt grinder	
5.	5 <sup>th</sup> Week	-	Polishing the samples using Emery Sheets of different grit sizes	
6.	6 <sup>th</sup> Week	-	Polishing the samples using velvet cloth and alumina powder	
7.	7 <sup>th</sup> Week	-	Microstructural Analysis	
8.	8 <sup>th</sup> Week	-	Hardness Measurement	
FORMABILITY				
9.	9 <sup>th</sup> Week	-	Tensile Test on Sheet metal	Practical
10	10 <sup>th</sup> Week	-	Three point bend test	
11	11 <sup>th</sup> Week	-	Deep Drawing	

<b>COURSE ASSESSMENT METHODS</b>				
<b>S.No.</b>	<b>Mode of Assessment</b>	<b>Syllabus</b>	<b>Duration</b>	<b>% Weightage</b>
1.	Regular practical lab	-	10*150 Minutes	75
2.	End Practical Examinations	-	180 Minutes	25
Total Assessment			33 Hrs	100

\*150 minutes for one experiment (Total – 8 Expt.)

### **ASSESSMENT**

1. Attending all the assessments is MANDATORY for every student.
2. It is mandatory for the students to have at least 75 % attendance
3. If any student is not able to attend any of the Lab section due to genuine reason, student is permitted to attend the compensation Lab at the end of the semester

### **ACADEMIC HONESTY & PLAGIARISM**

1. All the students are expected to be genuine during the course work. Taking of information by means of copying simulations, assignments, looking or attempting to look at another student's paper or bringing and using study material in any form for copying during any assessments is considered dishonest.
2. Tendering of information such as giving one's program, simulation work, assignments to another student to use or copy is also considered dishonest.
3. Preventing or hampering other students from pursuing their academic activities is also considered as academic dishonesty.
4. Any evidence of such academic dishonesty will result in the loss of marks on that assessment. Additionally, the names of those students so penalized will be reported to the class committee chairperson and HoD of the concerned department.

**ADDITIONAL COURSE INFORMATION**

The faculty is available for consultation at times as per the intimation given by the faculty.

**FOR APPROVAL**

1. Chakraborty  
2. C. S. Dasgupta  
Course Faculty \_\_\_\_\_ Staff Advisor Chakraborty HOD Ch. Dasgupta